UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/610,933	07/06/2000	Frederick Herbert Raab	GMRR PA00-3	5138

7590 08/27/2002

JAMES MARC LEAS
37 BUTLER DRIVE
S. BURLINGTON, VT 05403

EXAMINER	
SHINGLETON, MICHAEL B	
ART UNIT	PAPER NUMBER
2817	

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09-610,933	Applicant(s) Raab
	Examiner SHINGLETON	Group Art Unit 2817

---The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address---

P ri d for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☒ Responsive to communication(s) filed on 6-3-2002.

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-61 is/are pending in the application.

Of the above claim(s) 10-12, 20-27 and 47-55 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-9, 13-19, 28, 30-34, 37, 38, 40-46 and 56-61 is/are rejected.

☒ Claim(s) 29, 35, 36, and 39 is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of References Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9, 13-19, 28, 30-34, 37, 38, 40-46, and 56-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sokal et al. 3,919,656 (Sokal) in view of Shenai et al. 5,914,513 (Shenai).

Figures 8a and 8b of Sokal discloses a power amplifier having a power amplifier Q with a tuned output network 9. Note that the driver 2 clearly adjusts/modulates the signals to the power amplifier, as this is what a driver does by definition. The reactive components are adapted to be tuned to a selected frequency by the tuning signal applied to the tuning input. Sokal teaches that variable reactive elements can be utilized in the filter but is silent on the exact variable element. As would have been well known to one of ordinary skill in the art, an electronically controlled reactive element is a conventional means for forming a variable reactive element. In fact Shenai of record discloses such a conventional means and is in fact an art recognized equivalent to C4 in Sokal. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to use electronic controlled reactive elements because, as the Sokal reference is silent on the exact variable reactive element, any art-recognized equivalent variable reactive element would have been usable therewith such as that of Shenai. In claims like claims 14, 15, 16, 17, 18 and 19 various forms of art recognized equivalent variable capacitances are recited. Namely, the use of a transistor, a pin diode, a capacitor with variable-dielectric material or a piezo-electric controlled variable capacitance device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide any one of the above variable capacitors of the variable capacitor of Sokal as these above mentioned elements are art recognized equivalents to that of Sokal.

Claims 3, 5 and 6 recite that the impedance of the output network is selected so that a desired optimum impedance match is achieved. Sokal is silent on this, however, this is merely common engineering practice and represents selecting the optimum or workable range for the system which involves but routine skill in the art.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the impedance to provide a matching condition so as to optimize power transfer and minimize reflections as is common engineering practice, which also involves but routine skill in the art.

Claims 8 and 9 recite that the tuning inputs 3 are selected in accordance with a predetermined look-up table of tuning inputs. The use of a digital look-up table and associated digital processor is a common arrangement in control systems to set the proper control signal for a specified input.

Thus it would have been obvious to utilize a digital look-up table and processor in the control circuit of Sokal so as to set the proper control signal value as is well known in the art.

Claim 28 has been amended to be substantially broader than originally presented. Claim 28 now recites that a controller provides the electronic signal to control the device. As noted above replacing the variable elements with electronic controlled elements would have been obvious to one of ordinary skill in the art at the time the invention was made. Likewise, it is common engineering sense that one needs a controller to form the electronic signal and such circuits are conventionally known to do this. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to used a controller forming an electronic signal because as the Sokal reference is silent on the exact controlling circuit, any art recognized equivalent controller having an electronic output signal that controls the variable reactance in the manner desired would have been usable therewith.

As to there being an input signal, i.e. command signal, to the controller, control circuits with such features are well known for allowing outside input.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a controller with a command signal input so as to allow outside input to the device as is known in the art.

Claims 37 and 38 recite a bias arrangement that is set for optimum operation of the power amplifier. Sokal does not show a bias arrangement but Sokal must have a bias arrangement to properly bias the amplifier into the proper operational region as is known in the art. It is a common engineering principle and to optimum the bias is merely setting forth the workable or optimum range, which involves routine skill in the art.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the necessary bias arrangement for the amplifier of Sokal so as to bias the amplifier in the proper region of operation as is well known and to set the value to be optimum as this involves but routine skill in the art.

Sokal is silent on the class of operation and tuning the filter for optimum operation, but the class of operation and the tuning for optimum operation are merely part of the selection of the optimum or workable range (Note that the class of operation is dependent on the biasing.).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made so as to select the desired class of operation as this involves but routine skill in the art.

Allowable Subject Matter

Claims 29, 35, 36, and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims for the same reasons as presented in the previous Office action.

Applicant's arguments with respect to the claims of record have been considered but are moot in view of the new ground(s) of rejection. Applicant believes that Sokal of record is directed toward purely mechanical tunable capacitors and inductors. Sokal appears to be silent on this, but never-the-less even if true this does not subtract from the argument that art recognized equivalent adjustable elements can be used in place of Sokal.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is 703-308-4903. The examiner can normally be reached on Monday-Thursday from 8:30 to 4:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (703) 308-4909. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

MBS
August 25, 2002

MICHAEL B SHINGLETON
PRIMARY EXAMINER
GROUP ART UNIT 2817